SEC- VD- DSW Multiple Display Control - 0008

Ver. 2.7

2009- 06- 25

Multiple Display Control Protocol

for SyncMaster P42H(n) P50Hn P50F(n) P63F(n) 320MX(n) 400CX(n) 400MX(n) 460CX(n) 320MP(n) 400MP(n) 460MP(n),460UT(n) 320MX(n)-2 320MP-2 400MX(n)-2 400FP(n)-2 460MX(n)-2 460FP(n)-2

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1.6	2005. 11. 11	Add Command (Screen Scroll On)	S. Jang	
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1. INTERFACE

1.1. Connecting Method

1) Connecting method

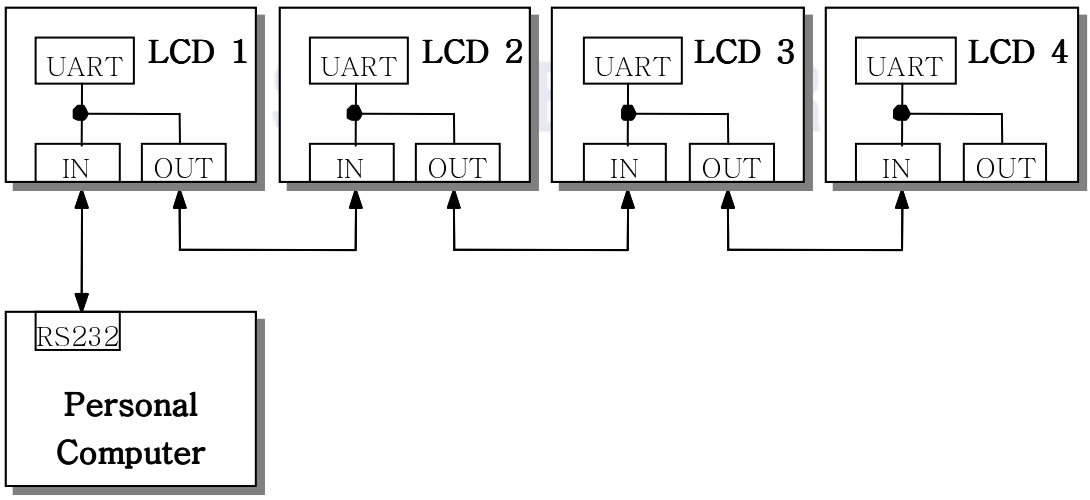
- As of Figure 1-1, connect RS232-In(9Pin) to Personal Computer, connect the next TV of Display to be connected from RS232-Out (9Pin).

- In doing so, each TV or Monitor ID can be given from 0 to 99.

- ID cannot be given duplicated.

- When granting ID, it does not need to be given out in the connecting order.

Figure1-1 PC,TV or Monitor connecting method



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1.2. Connection Spec.

1) Connection Spec.

- Interactive communications using RS232.

- Of RS232 standards, three signals TxD(No.2), RxD(No.3) and GND(No.5) are used → Refer to Figure 1

- Limit the distance between devices to less than 4m.

- Currently, out of 9 PIN RS232 terminal, PINS in use are numbers 2, 3 and 5.

- **ID should show hexadecimal value of assigned ID, but ID 0 should be 0xFF.**

- **Every communication will be made in hexadecimals and Checksum is the sum of all remainings. If it exceeds two digits, for example, it is 11+FF+01+01=112, discard the number in the first digit like below.**

example) Power On & ID=0

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x11		1	**Power**	

→

Header	Command	0xFF	Data Length	Data 1	12
0xAA	0x11		1	**1**	

- **If you want to control every mechanism connected with Serial Cable regardless of its ID, set ID part to "0xFE" and send commands. At the time, each SET will follow commands but it will not respond with ACK.**

Table 2-1 RS232 Network spec

Bits Rate	9600 bps
Data Bits	8 bits
Parity	None
Stop Bits	1 bit
Flow Control	None

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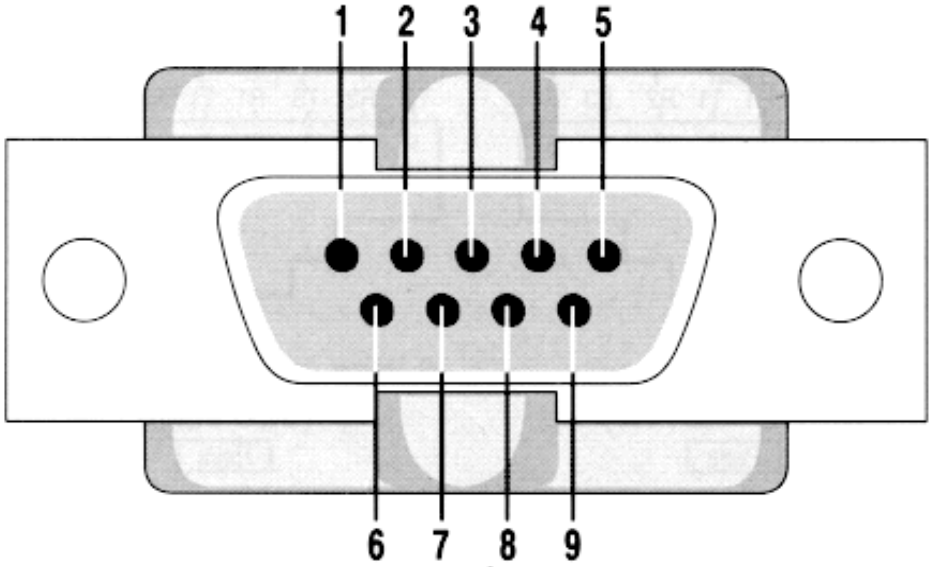
Figure 2-1 RS-232 pin out DB-9 pin used for Asynchronous Data



Pin	Signal	Pin	Signal
1	Data Carrier Detect	6	Data Set Ready
2	Received Data	7	Request to Send
3	Transmitted Data	8	Clear to Send
4	Data Terminal Ready	9	Ring Indicator
5	Signal Ground		

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2. Commanding words

No	Command Type	Command	Value Range
1	Status Control	0x00	-
2	Time Control	0x01	-
3	On Time Control	0x02	-
4	Off Time Control	0x03	-
5	Video Control	0x04	-
6	Audio Control	0x05	-
7	RGB Control	0x06	-
8	Maintenance Control	0x08	-
9	Serial Number Control	0x0B	-
10	Display Status Control	0x0D	-
11	Software Version Control	0x0E	-
12	Model Number Control	0x10	-
13	Power Control	0x11	0 ~ 1
14	Volume Control	0x12	0 ~ 100
15	Mute Control	0x13	0 ~ 1
16	Input Source Control	0x14	-
17	Picture sizes Control	0x15	-
18	Direct Channel Control	0x17	-
19	Screen Mode Control	0x18	-
20	Screen Size Control	0x19	0 ~ 255
21	Red Offset Control	0x1A	0 ~ 100
22	Green Offset Control	0x1B	0 ~ 100
23	Blue Offset Control	0x1C	0 ~ 100
24	Contrast Control	0x24	0 ~ 100
25	Brightness Control	0x25	0 ~ 100
26	Sharpness Control	0x26	0 ~ 100
27	Color Control	0x27	0 ~ 100
28	Tint Control	0x28	0 ~ 100
29	Red Gain Control	0x29	0 ~ 100
30	Green Gain Control	0x2A	0 ~ 100

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31	Blue Gain Control	0x2B	0 ~ 100
32	Treble Control	0x2C	0 ~ 100
33	Bass Control	0x2D	0 ~ 100
34	Coarse Control	0x2F	0 ~ 1
35	Fine Control	0x30	0 ~ 1
36	H-Position Control	0x31	0 ~ 1
37	V-Position Control	0x32	0 ~ 1
38	Clear Menu Control	0x34	0
39	Remote Control	0x36	0 ~ 1
40	RGB Contrast Control	0x37	0 ~ 100
41	RGB Brightness Control	0x38	0 ~ 100
42	Auto Adjustment Control	0x3D	0
43	Color Tone Control	0x3E	0 ~ 4
44	Color Temperature Control	0x3F	0 ~ 10
45	Pixel Shift Control	0x4C	-
46	Video Wall Control	0x4F	-
47	Auto Lamp Control	0x57	-
48	Manual Lamp Control	0x58	0 ~ 100
49	Safety Screen Run Control	0x59	0 ~ 6
50	Safety Screen Control	0x5B	-
51	Video Wall Mode Control	0x5C	0 ~ 1
52	Safety Lock	0x5D	0 ~ 1
53	Panel Lock	0x5F	0 ~ 1
54	OSD On/OFF	0x70	0 ~ 1
55	P. Mode Control	0x71	-
56	S. Mode Control	0x72	0 ~ 4
57	NR Mode Set	0x73	0 ~ 1
58	PC Color Tone Control	0x75	0 ~ 3
59	Auto AutoAdjustment	0x76	0 ~ 1
60	All Keys Lock	0x77	0 ~ 1
61	SRS TSXT Control	0x78	0 ~ 1
62	Film Mode	0x79	0 ~ 1
63	Signal Balance	0x7A	0 ~ 1
64	SB Gain	0x7E	0 ~ 100
	SB Red Gain	0x7B	0 ~ 100

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	SB Green Gain	0x7C	0 ~ 100
	SB Blue Gain	0x7D	0 ~ 100
65	SB Sharpness	0x7F	0 ~ 100
66	Panel On Time	0x83	-
67	Video Wall On	0x84	0 ~ 1
68	Temperature Control	0x85	0 ~ 125
69	Brightness Sensor	0x86	0 ~ 1
70	Dynamic Contrast	0x88	0 ~ 1
71	Safety Screen On	0x88	1 ~ 5
72	Video Wall User Control	0x89	-
73	Model Name	0x8A	-

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"-" indicates multiple setting items-refer to "2.1. Command Detailed Explanation" for more details.

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2.1. Command Detailed Explanation

* Status Control

- Function

  Personal Computer shows current setting condition of TV / Monitor.

- Get Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x00		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		9	'A'	0x00	**Power**	**Volume**	

Val 3	Val 4	Val 5	Val 6	Val 7	Check Sum
Mute	**Input**	**Aspect**	**N Time NF**	**F Time NF**	

Power : Power code to be set on TV / Monitor

Volume : Volume value code (0 ~ 100) to be set on TV / Monitor

Mute : Mute code to be set on TV / Monitor

Input : Input Source code to be set on TV/Monitor

Aspect : Image Size code to be set on TV/Monitor

N Time NF : OnTime ON/OFF value of time to set TV/Monitor

F Time NF : OffTime ON/OFF value of time to set TV/Monitor

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x00	**ERR**	

ERR : Error code that shows what occurred error is

0	Check Sum Error
1	etc.

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* Time Control

- Function

  Personal Computer controls current time of TV / Monitor.

- Get Time Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x01		0	

- Set Time

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4
0xAA	0x01		5	**AP Time**	**H Time**	**M Time**	**0**

Data 5	Check Sum
0	

AP Time : AM/PM value to be set on TV/Monitor

1	AM
0	PM

H Time : Hour value (1 ~ 12) to be set on TV/Monitor

M Time : Minute value (0 ~ 59) to be set on TV/Monitor

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		7	'A'	0x01	**AP Time**	**H Time**

Val 3	Val 4	Val 5	Check Sum
M Time	**0**	**0**	

AP Time, H Time, M Time : Same as above

H Time, M Time if current time was not set on Monitor, 0xFF

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x01	**ERR**	

ERR : Error code that shows what occurred error is

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* On Time Control

- Function:

  Personal Computer controls the time that TV / Monitor turns on.

- Get On Time Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x02		0	

- Set On Time

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4
0xAA	0x02		6	**N AP Time**	**N H Time**	**N M Time**	**N Time VR**

Data 5	Data 6	Check Sum
N Time NF	**N Time SC**	

N AP Time : On Time AM/PM value to be set on TV/Monitor

1	AM
0	PM

N H Time : On Time Hour value (1 ~ 12) to be set on TV/Monitor

N M Time : On Time Minute value (0 ~ 59) to be set on TV/Monitor

N Time VR : On Time Volume value (0 ~ 100) to be set on TV/Monitor

N Time NF : On Time ON/OFF value to be set on TV/Monitor

1	On Time ON
0	On Time OFF

N Time SC : On Time ON/OFF Control Source value (refer to *Input Source Control*)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		8	'A'	0x02	**N AP Time**	**N H Time**

Val 3	Val 4	Val 5	Val 6	Check Sum
N M Time	**N Time VR**	**N Time NF**	**N Time SC**	

N AP Time, N H Time, N M Time, N Time VR, N Time NF, N Time SC : Same as above

N H Time, N M Time if On Time was not set on Monitor, 0xFF

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x02	**ERR**	

ERR : Error code that shows what occurred error is

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* Off Time Control

- Function

  Personal Computer controls the time that TV / Monitor turns off.

- Get Off Time Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x03		0	

- Set Off Time

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4
0xAA	0x03		6	**F AP Time**	**F H Time**	**F M Time**	**0**

Data 5	Data 6	Check Sum
F Time NF	**0**	

F AP Time : Off Time AM/PM value to be set on TV/Monitor

1	AM
0	PM

F H Time : Off Time Hour value (1 ~ 12) to be set on TV/Monitor

F M Time : Off Time Minute value (0 ~ 59) to be set on TV/Monitor

F Time NF : Off Time ON/OFF value to be set on TV/Monitor

1	Off Time ON
0	Off Time OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		8	'A'	0x03	**F AP Time**	**F H Time**

Val 3	Val 4	Val 5	Val 6	Check Sum
F M Time	**0**	**F Time NF**	**0**	

F AP Time, F H Time, F M Time, F Time NF : Same as above

F H Time, F M Time if Off Time was not set on, 0xFF

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x03	**ERR**	

ERR : Error code that shows what occurred error is

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* Video Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer shows the screen condition of TV / Monitor.

- Get Video Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x04		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		0x0A	'A'	0x04	**Contrast**	**Brightness**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Check Sum
Sharpness	**Color**	**Tint**	**ColorTone**	**ColorTemp**	**0**	

Contrast, Brightness, Sharpness, Color, Tint, ColorTone, ColorTemp :
Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x04	**ERR**	

ERR : Error code that shows what occurred error is

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* Audio Control

- Function

  Personal Computer shows the sounds condition of TV / Monitor.

- Get Audio Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x05		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		0x05	'A'	0x05	**Treble**	**Bass**

Val 3	Check Sum
Balance	

Treble, Bass, Balance : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x05	**ERR**	

ERR : Error code that shows what occurred error is

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* RGB Control (PC, BNC, DVI Only)

- Function

  Personal Computer shows screen condition of TV / Monitor.

- Get Video Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x06		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		0x0A	'A'	0x06	**Contrast**	**Brightness**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Check Sum
ColorTone	**ColorTemp**	**0**	**Red Gain**	**Green Gain**	**Blue Gain**	

Contrast, Brightness, ColorTone, ColorTemp, Red, Green, Blue : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x06	**ERR**	

ERR : Error code that shows what occurred error is

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* Maintenance Control

- Function

  Personal Computer shows maintenance state of TV / Monitor.

  - Get Maintenance Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x08		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		0x15	'A'	0x08	**Power**	**P.Size**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Val 9	Val 10
P.Source	**LMax_H**	**LMax_M**	**LMax_AP**	**LMaxValue**	**LMin_H**	**LMin_M**	**LMin_AP**

Val 11	Val 12	Val 13	Val 14	Val 15	Val 16
LMinValue	**LampValue**	**ScreenInterval**	**ScreenTime**	**ScreenType**	**V.Wall**

Val17	Val 18	Val19	Check Sum
V.WallFormat	**V.WallDivid**	**V.WallSet**	

Power : Power code set on TV / Monitor
P.Size : P.Size value code set on TV / Monitor
P.Source : Source value code set on TV / Monitor
LMax_H : Auto Lamp Max Time Hour (1 ~ 12) set on TV / Monitor
LMax_M : Auto Lamp Max Time Minute (0 ~ 59) set on TV / Monitor
LMax_AP : Auto Lamp Max Time AM/PM set on TV / Monitor
LMaxValue : Auto Lamp Max value (0 ~ 100) set on TV / Monitor
LMin_H : Auto Lamp Min Time Hour (1 ~ 12) set on TV / Monitor
LMin_M : Auto Lamp Min Time Minute (0 ~ 59) set on TV / Monitor
LMin_AP : Auto Lamp Min Time AM/PM set on TV / Monitor
LMinValue : Auto Lamp Min value (0 ~ 100, 0xFF) set on TV / Monitor
LampValue : Manual Lamp Control value (0 ~ 100, 0xFF) set on TV / Monitor
ScreenInterval : Safety Screen Interval (Per Hour, 0(0ff)~10) set on TV / Monitor
ScreenTime : Safety Screen Time (Per Second, 0(off) ~5) set on TV / Monitor
ScreenType : Safety Screen Type (3 ~ 6) set on TV / Monitor
V.Wall : Video Wall Mode code set on TV / Monitor
V.WallFormat : Video Wall Format code set on TV / Monitor
V.WallDivid : Video Wall Divider code set on TV / Monitor
V.WallSet : Video Wall Set Number code set on TV / Monitor
Caution : If LMinValue is **Returned to 0xFF** then Auto Lamp Control is OFF.
If LampValue is **Returned to 0xFF** then Manual Lamp Control is OFF.

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x08	**ERR**	

ERR : Error code that shows what occurred error is

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* Serial Number Control

- Function

  Personal Computer controls serial number of TV / Monitor.

- Get SerialNum Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x0B		0	

- Ack SerialNum

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		**0x14**	'A'	0x0B	**Data1**	**Data2**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Val 9	Val 10
Data3	**Data4**	**Data5**	**Data6**	**Data7**	**Data8**	**Data9**	**Data10**

Val 11	Val 12	Val 13	Val 14
Data11	**Data12**	**Data13**	**Data14**

Val 11	Val 12	Val 13	Val 14	Check Sum
Data15	**Data16**	**Data17**	**Data18**	

Data1 ~ Data14 : Serial Number set on TV / Monitor.
Data15 ~ Data18 : Reserved

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x0B	**ERR**	

ERR : Error code that shows what occurred error is

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* Display Status Control

- Function

  Personal Computer shows display condition of TV / Monitor.

- Get Maintenance Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x0D		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		**0x08**	'A'	0x0D	**Lamp**	**Temperature**

Val 3	Val 4	Val 5	Val 6	Check Sum
Bright_Sensor	**No_Sync**	**Cur_Temp**	**FAN**	

Lamp : Lamp Error code (0 : Normal, 1 : Error) to be set on TV / Monitor

Temperature : Temperature Error code (0: Normal, 1: Error) to be set on TV / Monitor

Bright_Sensor : Brighte Sensor Error code (0: Normal, 1: Error) to be set on TV/Monitor

No_Sync: Sync Error code(0: Normal, 1: Error, No Sync) to be set on TV / Monitor

Cur_Temp : Current temperature of TV / Monitor

FAN : Fan Error code (0 : Normal, 1 : Error) to be set on TV / Monitor

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x0D	**ERR**	

ERR : Error code that shows what occurred error is

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* SW Version Control

- Function

  Personal Computer shows version information of TV / Monitor.

- Get Version Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x0E		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		**0x14**	'A'	0x0E	**Version1**	**Version2**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Val 9	Val 10
Version3	**Version4**	**Version5**	**Version6**	**Version7**	**Version8**	**Version9**	**Version10**

Val 11	Val 12	Val 13	Val 14	Val 15	Val 16
Version11	**Version12**	**Version13**	**Version14**	**Version15**	**Version16**

Val 17	Val 18	Check Sum
Version17	**Version18**	

Version1 ~ **Version12** : Project Info. of TV/Monitor

Version13 ~ Version18 : Software version of TV/Monitor

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x06	**ERR**	

ERR : Error code that shows what occurred error is

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* Model Number Control

- 기능

  Personal Computer가 TV / Monitor의 Model Number를 파악하여 보여준다.

- Get Model Number Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x10		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	Val 3	Check Sum
0xAA	0xFF		0x05	'A'	0x10	**Species**	**Model**	**TV**	**0**

Species : TV / Monitor에 사용된 패널의 종류

0x01	PDP
0x02	LCD
0x03	DLP

Model : TV / Monitor의 모델명

0x01	PPM50H2	0x15	SyncMaster 400DX(n) SyncMaster 460DX(n) SyncMaster 700DX(n) SyncMaster 820DX(n)
0x02	PPM42S2		
0x03	PS-42P2ST		
0x04	PS-50P2HT		
0x05	SyncMaster 400T	0x16	SyncMaster 460TX(n)
0x06	SyncMaster 403T	0x17	SyncMaster 400UX(n) SyncMaster 460UX(n)/460DR(n)
0x07	PPM42S3, SPD-42P3SM		
0x08	PPM50H3, SPD-50P3HM	0x18	SyncMaster 42TS/42PS SyncMaster P42HP
0x09	PPM63H3, SPD-63P3HM		
0x0A	PS-42P3ST	0x19	SyncMaster P50Hn
0x0B	SyncMaster 323T	0x1A	SyncMaster P50F(n)/P50FP
0x0C	SyncMaster 403T - CT40CS(N)	0x1B	SyncMaster P63F(n)/P63FP
		0x1C	SyncMaster 320MX(n)
0x0D	PPMxxM5x	0x1D	SyncMaster 400CX(n) SyncMaster 400MX(n) SyncMaster 400MP(n)
0x0E	SyncMaster 320P(n) SyncMaster 400P(n) SyncMaster 460P(n)		
		0x20	SyncMaster 460CX(n) SyncMaster 460MP(n)
0x10	SyncMaster 320PX SyncMaster 400PX(n) SyncMaster 460PX(n)	0x21	SyncMaster 520DX(n)
		0x22	SyncMaster 400UXn-UD SyncMaster 460UXn-UD
0x13	SyncMaster 400TX(n)		
0x14	SyncMaster 570DX	0x23	SyncMaster 400FX(n)
0x15	SyncMaster 320DX	0x24	SyncMaster 460DRn-A

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0x25	SyncMaster 460UTn-UD	0x26	SyncMaster 460UT(n)
0x27	SyncMaster 320MX(n)-2/MP-2	0x28	SyncMaster 400MX(n)-2/FP(n)-2
0x29	SyncMaster 460MX(n)-2/FP(n)-2	0x2A	SyncMaster P42H-2
0x2B	SyncMaster P50HP	0x2C	SyncMaster P50FP
0x2D	SyncMaster P63FP	0x2E	SyncMaster 460Rn-S
0x2F	SyncMaster 400DXn-S	0x30	SyncMaster 460DXn-S

TV : TV / Monitor의 TV 지원 여부

0x00	TV 미지원
0x01	TV 지원

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x10	**ERR**	

ERR : 발생된 오류가 무엇인지 나타내는 Error Code

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* Power Control

- Function

  Personal Computer turns TV / Monitor power ON/OFF.

- Get Power ON/OFF Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x11		0	

- Set Power ON/OFF

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x11		1	**Power**	

Power : Power code to be set on TV / Monitor

1	Power ON
0	Power OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x11	**Power**	

Power : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x11	**ERR**	

ERR : Error code that shows what occurred error is

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* Volume Control

- Function

  Personal Computer changes volume of TV / Monitor.

- Get Volume Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x12		0	

- Set Volume

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x12		1	**Volume**	

Volume : Volume value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x12	**Volume**	

Volume : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x12	**ERR**	

ERR : Error code that shows what occurred error is

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* Mute Control

- Function

  Personal Computer turns TV / Monitor mute ON/OFF.

- Get Mute ON/OFF Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x13		0	

- Set Mute ON/OFF

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x13		1	**Mute**	

Mute : Mute code to be set on TV / Monitor

1	Mute ON
0	Mute OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x13	**Mute**	

Mute : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x13	**ERR**	

ERR : Error code that shows what occurred error is

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* Input Source Control

- Function

  Personal Computer changes input source of TV / Monitor.

- Get Input Source Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x14		0	

- Set Input Source

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x14		1	**Input**	

Input : Input Source code to be set on TV / Monitor

0x14	PC
0x1E	BNC
0x18	DVI
0x0C	AV
0x04	S-Video
0x08	Component
0x20	MagicNet
0x1F	DVI_VIDEO
0x30	RF(TV)
0x40	DTV
0x21	HDMI
0x22	**HDMI_PC**

Caution : **DVI_VIDEO, HDMI_PC → Get Only**

In the case of MagicNet, only possible with models include MagicNet.

In the case of TV, only possible with models include TV.

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x14	**Input**	

Input : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x14	**ERR**	

ERR : Error code that shows what occurred error is

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* Picture Size Control

- Function

  Personal Computer changes Picture Size of TV / Monitor.

  Cannot control when Video Wall is on.

- Get Picture Size Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x15		0	

- Set Picture Size

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x15		1	**Aspect**	

Aspect : Picture Size code to be set on TV / Monitor

PC1, PC2, DVI, BNC,HDMI_PC	
0x10	16 : 9
0x18	4 : 3
AV, S-VIdeo, Component,DVI_Video,HDMI_Video	
0x00	Auto Wide
0x01	16 : 9
0x04	Zoom
0x05	Zoom1
0x06	Zoom2
0x09	**Just Scan**
0x31	Wide Zoom
0x0B	4 : 3
0x0C	**Wide Fit**

Caution :**For some Image, Picture sizes are not supported depending on some input signals (720p, 1080i).**

For MFM model only possible for those include Europe TV if size is Auto Wide.

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x15	**Aspect**	

Aspect : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x15	**ERR**	

ERR : Error code that shows what occurred error is

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* Direct Channel Control (DTV)

Caution : Only works with models include TV.

- Function

  Personal Computer can control TV Channel.

- Get Channel

Header	Command	ID	Data Length	Check Sum
0xAA	0x17		0	

- Set Channel

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4
0xAA	0x17		0x0A	**Country**	**ATV_DTV**	**AirCable**	**CH_NUM (Hgh)**

Data 5	Data 6	Data 7	Data 8	Data 9	Data 10	Check Sum
CH_NUM (Low)	**Sel_Minor**	**Minor_CH (Hgh)**	**Minor_CH (Low)**	**Reserved**	**Reserved**	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2
0xAA	0xFF		0x0C	'A'	0x17	**Country**	**ATV_DTV**

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Val 9
AirCable	**CH_NUM (Hgh)**	**CH_NUM (Low)**	**Sel_Minor**	**Minor_CH (Hgh)**	**Minor_CH (Low)**	**Reserved**

Val 10	Check Sum
Reserved	

Country : Select the country to be set on TV / Monitor (0 : Korea, 1: USA, ...)

ATV_DTV : Select Analog TV and DTV to be set on TV / Monitor (0 : Analog TV, 1: Digital TV)

AirCalbe : Select if TV is cabled or general (0 : general, 1: cabled)

CH_NUM : TV channel number to be set on TV / Monitor (Analog TV : 1 ~ 135 , Digital TV : 0 ~ 999)

Sel_Minor : Select minor channel when DTV is to be set on TV / Monitor(0 : minor channel not selected. 1: minor channel selected.)

Minor_CH : Select minor channel number when DTV is to be set on TV / Monitor (0 ~ 999.)

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check

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SEC- VD- DSW External Control - 0008

0xAA	0xFF		3	'N'	0x17	ERR	Sum

ERR : Error code that shows what occurred error is

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* *Screen Mode Control*

- Function

  Personal Computer changes screen mode of TV / Monitor.

  Cannot control when Video Wall is on and only operates when Picture Size is Auto Wide.

- Get Screen Mode Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x18		0	

- Set Picture Size

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x18		1	**ScrMode**	

ScrMode : Screen Mode Code to be set on TV / Monitor

0x01	16 : 9
0x04	Zoom
0x31	Wide Zoom
0x0B	4 : 3

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x18	**ScrMode**	

ScrMode : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x18	**ERR**	

ERR : Error code that shows what occurred error is

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* *Screen Size Control*

- Function

  Personal Computer recognizes the screen size of TV / Monitor.

- Get Screen Size Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x19		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x19	**Screen Size**	

Screen Size : Screen size of TV / Monitor (Range: 0 ~ 255, Unit: Inch)

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x19	**ERR**	

ERR : Error code that shows what occurred error is

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* *Red Offset Control*

- Function

  Personal Computer changes R Offset from Signal Control function of TV / Monitor.

  ※ Signal Control R Offset Control only operates when Signal Balance is on and current input source is PC and BNC.

- Get Signal Control R Offset Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x1A		0	

- Set Signal Control R Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x1A		1	**R Offset**	

R Offset : R Gain value to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x1A	**R Offset**	

R Offset : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x1A	**ERR**	

ERR : Error code that shows what occurred error is

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* *Green Offset Control*

- Function

  Personal Computer changes G Offset from Signal Control function of TV / Monitor.

  ※ Signal Control G Offset Control only operates when Signal Balance is on and current input source is PC and BNC.

- Get Signal Control G Offset Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x1B		0	

- Set Signal Control G Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x1B		1	**G Offset**	

G Offset : G Offset value to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x1B	**G Offset**	

G Offset : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x1B	**ERR**	

ERR : Error code that shows what occurred error is

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* *Blue Offset Control*

- Function

  Personal Computer changes B Offset from Signal Control function of TV / Monitor.

  ※ Signal Control B Offset Control only operates when Signal Balance is on and current input source is PC and BNC.

- Get Signal Control B Offset Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x1C		0	

- Set Signal Control B Offset

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x1C		1	**B Offset**	

B Offset : B Offset value to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x1C	**B Offset**	

B Offset : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x1C	**ERR**	

ERR : Error code that shows what occurred error is

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* Contrast Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes contrast of TV / Monitor.

- Get Contrast Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x24		0	

- Set Contrast

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x24		1	**Contrast**	

Contrast : Contrast value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x24	**Contrast**	

Contrast : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x24	**ERR**	

ERR : Error code that shows what occurred error is

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* Brightness Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes brightness of TV / Monitor.

- Get Brightness Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x25		0	

- Set Brightness

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x25		1	Brightness	

Brightness : Brightness value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x25	Brightness	

Brightness : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x25	ERR	

ERR : Error code that shows what occurred error is

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* Sharpness Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes sharpness of TV / Monitor의.

- Get Sharpness Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x26		0	

- Set Sharpness

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x26		1	**Sharpness**	

Sharpness : Sharpness value code to be set on TV/Monitor (0 ~ 100)

Caution : **Sharpness could only be set in 50 Steps (0, 10, 20, 30... 100)**

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x26	**Sharpness**	

Sharpness : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x26	**ERR**	

ERR : Error code that shows what occurred error is

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* Color Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes the color of TV / Monitor.

- Get Color Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x27		0	

- Set Color

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x27		1	**Color**	

Color : Color value code to be set on TV/Monitor(0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x27	**Color**	

Color : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x27	**ERR**	

ERR : Error code that shows what occurred error is

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* Tint Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes tint of TV / Monitor when visual display is NTSC.
  Does not operate with PAL signals.

- Get Tint Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x28		0	

- Set Tint

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x28		1	**Tint**	

Tint : Tint value code to be set on TV/Monitor (0 ~ 100)

R	**Tint** Value
G	(100 - **Tint**) Value

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x28	**Tint**	

Tint : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x28	**ERR**	

ERR : Error code that shows what occurred error is

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* Red Gain Control

- Function

  Personal Computer changes Red Gain of TV / Monitor.

- Get Red Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x29		0	

- Set Red Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x29		1	**Red**	

Red : Red Gain value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x29	**Red**	

Red : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x29	**ERR**	

ERR : Error code that shows what occurred error is

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* Green Gain Control

- Function

  Personal Computer changes Green Gain of TV / Monitor.

- Get Green Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x2A		0	

- Set Green Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2A		1	**Green**	

Green : Green Gain value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2A	**Green**	

Green : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2A	**ERR**	

ERR : Error code that shows what occurred error is

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* Blue Gain Control

- Function

  Personal Computer changes Blue Gain of TV / Monitor.

- Get Blue Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x2B		0	

- Set Blue Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2B		1	**Blue**	

Blue : Blue Gain value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2B	**Blue**	

Blue : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2B	**ERR**	

ERR : Error code that shows what occurred error is

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* Treble Control

- Function

  Personal Computer changes Treble of TV / Monitor.

- Get Treble Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x2C		0	

- Set Treble

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2C		1	**Treble**	

Treble : Treble value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2C	**Treble**	

Treble : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2C	**ERR**	

ERR : Error code that shows what occurred error is

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* Bass Control

- Function

  Personal Computer changes Bass of TV / Monitor.

- Get Bass Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x2D		0	

- Set Bass

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2D		1	**Bass**	

Bass : Bass value code (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2D	**Bass**	

Bass : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2D	**ERR**	

ERR : Error code that shows what occurred error is

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* Balance Control

- Function

  Personal Computer changes Balance of TV / Monitor.

- Get Balance Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x2E		0	

- Set Balance

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2E		1	**Balance**	

Balance : Balance value code to be set on TV/Monitor (0 ~ 100)

L	(100 - **Balance**) Value
R	**Balance** Value

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2E	**Balance**	

Balance : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2E	**ERR**	

ERR : Error code that shows what occurred error is

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* Coarse Control (PC, BNC Only)

- Function

  Personal Computer adjusts Coarse of TV / Monitor.

- Get Coarse Status

  None

- Set Coarse

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x2F		1	**Coarse**	

Coarse : Coarse Increase/Decrease code to be set on TV/Monitor

1	Increase
0	Decrease

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x2F	**Coarse**	

Coarse : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x2F	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Fine Control (PC, BNC Only)

- Function

  Personal Computer adjusts Fine of TV / Monitor.

- Get Fine Status

  None

- Set Fine

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x30		1	**Fine**	

Fine : Phase Increase/Decrease code

1	Increase
0	Decrease

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x30	**Fine**	

Fine : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x30	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* H- Position Control (PC, BNC Only)

- Function

  Personal Computer adjusts Horizontal Position of TV / Monitor.

- Get H-Position Status

  None

- Set H-Position

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x31		1	**H-Pos**	

H-Pos : H-Position Increase/Decrease code to be set on TV/Monitor

1	Move to Right
0	Move to Left

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x31	**H-Pos**	

H-Pos : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x31	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* V- Position Control (PC, BNC Only)

- Function

  Personal Computer adjusts Vertical Position of TV/Monitor.

- Get V-Position Status

  None

- Set V-Position

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x32		1	**V-Pos**	

V-Pos : V-Position Increase/Decrease code to be set on TV/Monitor

1	Move Down
0	Move Up

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x32	**V-Pos**	

V-Pos : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x32	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Clear Menu Control

- Function

  Personal Computer removes Menu OSD left in TV / Monitor.

- Get Clear Menu Status

  None

- Set Clear Menu

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x34		1	**Clear**	

Clear : 0x00 (Always)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x34	**Clear**	

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x34	**ERR**	

ERR : Error code that shows what occurred error is

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최준희07035805S/W 2(VD)******96 20090625174058

* Remote Control

- Function

Personal Computer enables/disables IR receiving function of TV/Monitor/
Can operate regardless of whether power is ON/OFF

- Get Remote Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x36		0	

- Set Remote Enable/Disable

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x36		1	**RMC**	

RMC : Power code to be set on TV/Remocon

1	Remocon Enable
0	Remocon Disable

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x36	**RMC**	

RMC : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x36	**ERR**	

ERR : Error code that shows what occurred error is

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최준희07035805S/W 2(VD)******96 20090625174058

* RGB Contrast Control (PC, BNC, DVI Only)

- Function

  Personal Computer changes contrast of TV / Monitor when Input Source is PC.

- Get Contrast Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x37		0	

- Set Contrast

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x37		1	**Contrast**	

Contrast : RGB Contrast value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x37	**Contrast**	

Contrast : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x37	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* RGB Brightness Control (PC, BNC, DVI Only)

- Function

  Personal Computer changes Brightness when Input Source of TV / Monitor is PC.

- Get Brightness Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x38		0	

- Set Brightness

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x38		1	**Brightness**	

Brightness : RGB Brightness value code to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x38	**Brightness**	

Brightness : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x38	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Auto Adjustment Control (PC, BNC Only)

- Function

  Personal Computer controls PC system screen automatically.

- Get Auto Adjustment Status

  None

- Set Auto Adjustment

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x3D		1	**Auto**	

Auto : 0x00 (Always)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x3D	**Auto**	

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x3D	**ERR**	

ERR : Error code that shows what occurred error is

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최준희07035805S/W 2(VD)******96 20090625174058

* Color Tone Control (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes Color Tone of TV / Monitor.

- Get Color Tone Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x3E		0	

- Set Color Tone

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x3E		1	**Color Tone**	

Color Tone : Color Tone value code to be set on TV/Monitor (0 ~ 4)

0x00	Cool 2
0x01	Cool 1
0x02	Normal
0x03	Warm 1
0x04	Warm 2
0x50	Off

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x3E	**Color Tone**	

Brightness : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x3E	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Color Temperature Control

- Function

  Personal Computer changes Color Temperature value of TV / Monitor.

  Only operates when Color Tone is set to Off.

- Get C_Temp Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x3F		0	

- Set C_Temp

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x3F		1	**C_Temp**	

C_Temp : Color Temperature value code to be set on TV/Monitor (0 ~ 10)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x3F	**C_Temp**	

C_Temp : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x3F	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Pixel Shift Control

- Function

  Personal Computer controls Pixel Shift function of TV / Monitor.

  Cannot control when Video Wall is on or when Zoom(0x39) is set or when Input Signal is VESA Mode in DVI.

- Get Pixel Shift Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x4C		0	

- Set Pixel Shift

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4	
0xAA	0x4C		0x04	**Shift**	**H.Dot**	**V.Line**	**S.Time**	

Check Sum

Shift : Pixel Shift On/Off Code to be set on TV/Monitor

Caution : **If Shift value is off, H.Dot, V.Line, S.Time values are ignored in TV / Monitor.**

1	ON
0	OFF

H.Dot : Horizontal Dot value code set on TV/Monitor (0 ~ 4)

V.Line : Vertical Line value code set on TV/Monitor (0 ~ 4)

S.Time : Shift Time value code set on TV/Monitor (1 ~ 4)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		0x06	'A'	0x4C	**Shift**	**H.Dot**	

Val 3	Val 4	Check Sum
V.Line	**S.Time**	

Shift, H.Dot, V.Line, S.Time : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x4C	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Auto Lamp Control

- Function

  Personal Computer sets Auto Lamp Function of TV / Monitor.

  When Manual Lamp Control is on, Auto Lamp Control will automatically turn off.

- Get Auto Lamp

Header	Command	ID	Data Length	Check Sum
0xAA	0x57		0	

- Set Auto Lamp

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Data 4	
0xAA	0x57		8	**LMax_H**	**LMax_M**	**LMax_AP**	**LMaxValue**	

Data 5	Data 6	Data 7	Data 8	Check Sum
LMin_H	**LMin_M**	**LMin_AP**	**LMinValue**	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		0x0A	'A'	0x57	**LMax_H**	**LMax_M**	

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Check Sum
LMax_AP	**LMaxValue**	**LMin_H**	**LMin_M**	**LMin_AP**	**LMinValue**	

LMax_H : Auto Lamp Max Time Hour set on TV/Monitor (1 ~ 12)
LMax_M : Auto Lamp Max Time Minute set on TV/Monitor (0 ~ 59)
LMax_AP : Auto Lamp Max Time set on TV/Monitor AM/PM
LMaxValue : Auto Lamp Max Value set on TV/Monitor (0 ~ 100)
LMin_H : Auto Lamp Min Time Hour set on TV/Monitor (1 ~ 12)
LMin_M : Auto Lamp Min Time Minute set on TV/Monitor (0 ~ 59)
LMin_AP : Auto Lamp Min Time set on TV/Monitor AM/PM
LMinValue : Auto Lamp Min Value set on TV/Monitor (0 ~ 100)
Caution: When LMinValue is **Returned** to **0xFF**, Auto Lamp Control is off.
When Dynamic contrast is on, Auto Lamp Control does not operate.

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x57	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Manual Lamp Control

- Function

  Personal Computer sets Manual Lamp Function of TV / Monitor.

  When Auto Lamp Control is on, Manual Lamp Control will automatically turn off.

- Get Manual Lamp Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x58		0	

- Set Manual Lamp

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x58		1	**LampValue**	

LampValue : Manual Lamp value to be set on TV/Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x58	**LampValue**	

LampValue : Same as above

Caution : When LampValue is **Returned** to **0xFF,** Manual Lamp Control is off.
When Dynamic contrast is on, Manual Lamp Control does not operate.

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x58	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Safety Screen Run Control

- Function

  Personal Computer will make Safety Screen function to operate immediately, not by Timer operation.

- Get **Safety Screen Run** Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x59		0	

- Set **Safety Screen Run**

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x59		1	**Safety Screen Type**	

Safety Screen Type : Safety Screen Type to be set on TV/Monitor (1~6)

0	Off
1	Signal Pattern
2	All White
3	Scroll
4	Bar
6	Eraser

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x59	**Safety Screen Type**	

Safety Screen Type : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x59	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* SBP Timer Control (TV)

- Function

  Personal Computer sets Screen Burn Protection Timer of TV/Monitor.

- Get SBP Timer Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x5B		0	

- Set SBP Timer

Header	Command	ID	Data Length	Data 1	Data 2	Data 3	Check Sum
0xAA	0x5B		3	**Timer**	**T.Period**	**T.Time**	

Timer : SBP Timer code to be set on TV/Monitor

0	OFF
1	Pattern
2	All White
3	Inverse
4	Bar
5	Bar & Inverse

T.Period : SBP Timer Period value code to be set on TV/Monitor (1~24 Hr.)

T.Time : SBP Timer Time value code set on TV/Monitor (1~30 min.)

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- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		5	'A'	0x5B	**Timer**	**T.Period**	

Val 3	Check Sum
T.Time	

Timer, T.Period, T.Time : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x5B	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Video Wall Mode Control

- Function

  Personal Computer converts Video Wall Mode of TV / Monitor when Video Wall is ON.

  Only works with TV/Monitor where Video Wall is on.

  Does not operate in MagicNet.

- Get Video Wall Mode

Header	Command	ID	Data Length	Check Sum
0xAA	0x5C		0	

- Set Video Wall Mode

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x5C		1	**WallMode**	

WallMode : Video Wall Mode code to be set on TV/Monitor

1	Full
0	Natural

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x5C	**WallMode**	

WallMode : same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x5C	**ERR**	

ERR : Error code that shows what occurred error is

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최준희07035805S/W 2(VD)******96 20090625174058

* Safety Lock

- Function

Personal Computer turns Safety Lock function of TV/Monitor On/Off.
전원 On/Off 여부와 상관없이 동작할 수 있다.

- Get Safety Lock Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x5D		0	

- Set Safety Lock Enable/Disable

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x5D		1	**Lock**	

Lock : Lock code to be set on TV/Monitor

1	On
0	Off

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x5D	**Lock**	

Lock : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x5D	**Lock**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Panel Lock

- Function

  Personal Computer turns Panel function Key Lock of TV/Monitor On/OFF.

  Can operate regardless of whether power is on/off.

- Get Panel Lock Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x5F		0	

- Set Panel Lock

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x5F		1	**Panel Lock**	

Panel Lock : Panel Key Lock On/Off code to be set on TV/Monitor

1	Lock
0	Unlock

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x5F	**Panel Lock**	

Panel Lock : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x5F	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* OSD On/Off

- Function

  Personal Computer turns OSD of TV / Monitor On/Off.

  When OSD is on, OSD will be shown on screen

  When OSD is off, OSD will not shown on screen at all

- Get OSD Enable Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x70		0	

- Set OSD Enable/Disable

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x70		1	**OSD**	

OSD : OSD On/Off code to be set on TV/Monitor

1	OSD On
0	OSD Off

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x70	**OSD**	

OSD : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x70	**ERR**	

ERR : Error code that shows what occurred error is

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최준희07035805S/W 2(VD)******96 20090625174058

* P.Mode Control

- Function

  Personal Computer changes Picture Mode of TV / Monitor.

- Get PMode Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x71		0	

- Set PMode

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x71		1	**PMode**	

PMode : Picture Mode code to be set on TV/Monitor

Source	Data	Mode
AV S-Video Component HDCP (TV)	0x00	Dynamic
	0x01	Standard
	0x02	Movie
	0x03	Custom
	0x50	Off
PC BNC DVI (MagicNet)	0x10	Entertain
	0x11	Internet
	0x12	Text
	0x13	Custom
	0x50	Off

Caution : Dynamic Contrast will not operate in any other mode except Off mode.

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x71	**PMode**	

PMode : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x71	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* S.Mode Control

- Function

  Personal Computer changes Sound Mode of TV / Monitor.

- Get SMode Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x72		0	

- Set SMode

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x72		1	**SMode**	

SMode : Sound Mode code to be set on TV/Monitor

Data	Mode
0x00	Standard
0x01	Music
0x02	Movie
0x03	Speech
0x04	Custom

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x72	**SMode**	

SMode : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x72	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* NR Mode Set (ATV, DTV, AV, S- Video, Component, HDMI Only)

- Function

  Personal Computer changes Digital NR mode.

- Get NR Mode Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x73		0	

- Set NR Mode

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x73		1	**NR Mode**	

NR Mode : NR Mode On/Off code to be set on TV/Monitor

1	NR Mode On
0	NR Mode Off

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x73	**NR Mode**	

NR Mode : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x73	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* PC Color Tone Control (PC, BNC, DVI Only)

- Function

  Personal Computer can change color tone of Monitor.

- Get Color Tone Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x75		0	

- Set Color Tone

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x75		1	**Color Tone**	

Color Tone : Color Tone value code to set on TV/Monitor (0 ~ 3)

Source	Data	Mode
PC DVI BNC	0x00	Custom
	0x01	Cool
	0x02	Normal
	0x03	Warm
	0x50	Off

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x75	**Color Tone**	

Color Tone : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x75	**ERR**	

ERR : Error code that shows what occurred error is

최준희07035805S/W 2(VD)******96 20090625174058

* Auto AutoAdjustment

- Function

  Personal Computer can Enable/Disable Auto Adjustment function.

  On 되었을 경우에만 Auto Auto Adjustment 기능이 동작된다.

- Get A.Adjustment Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x76		0	

- Set A.Adjustment

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x76		1	**A.Adjustment**	

A.Adjustment : Auto Auto Adjustment Value Code to be set on TV/Monitor

1	Enable
0	Disable

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x76	**A.Adjustment**	

A.Adjustment : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x76	**ERR**	

ERR : Error code that shows what occurred error is

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* All Keys Lock

- Function

  Personal Computer turns both REMOCON and Panel Key Lock function on/off.

  Can operate regardless of whether power is on/off.

- Get All Key Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x77		0	

- Set All Key Lock/Unlock

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x77		1	**All Key**	

All Key : Lock On/Off code of every Key to be set on TV/Monitor

1	Lock
0	Unlock

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x77	**All Key**	

All Key : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x77	**ERR**	

ERR : Error code that shows what occurred error is

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61) SRS TS XT Control

- Function

  Personal Computer turns SRS TS XT of TV / Monitor on/off.

  Can only operate with TV/Monitor that has SRS TS XT function.

- Get SRS TS XT Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x78		0	

- Set SRS TSXT

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x78		1	**SRS**	

SRS : SRS TS XT code to be set on TV/Monitor

1	SRS ON
0	SRS OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x78	**SRS**	

SRS : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x78	**ERR**	

ERR : Error code that shows what occurred error is

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62) Film Mode Control

- Function

  Personal Computer turns Film Mode of TV / Monitor on/off.

- Get Film Mode Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x79		0	

- Set Film Mode

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x79		1	**FMode**	

FMode : Film Mode code to be set on TV/Monitor

1	Film Mode ON
0	Film Mode OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x79	**FMode**	

FMode : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x79	**ERR**	

ERR : Error code that shows what occurred error is

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63) Signal Balance (PC, BNC Only)

- Function

  Personal Computer turns Signal Balance of TV / Monitor ON/OFF.

- Get Signal Balance Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x7A		0	

- Set Signal Balance

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x7A		1	**SBalance**	

SBalance : Signal Balance code to be set on TV/Monitor

1	Signal Balance ON
0	Signal Balance OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x7A	**SBalance**	

SBalance : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x7A	**ERR**	

ERR : Error code that shows what occurred error is

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64) SB Red Gain (PC, BNC Only)

- Function

  Personal Computer changes Red Gain value of Monitor Signal Balance.

- Get SB Red Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x7B		0	

- Set SB Red Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x7B		1	**SB R Gain**	

SB R Gain : Phase B value code of Signal Balance to be set on Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x7B	**SB R Gain**	

SB R Gain : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x7B	**ERR**	

ERR : Error code that shows what occurred error is

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65) SB Green Gain(PC, BNC Only)

- Function

  Personal Computer changes Green Gain value of Monitor Signal Balance.

- Get SB Green Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x7C		0	

- Set SB Green Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x7C		1	**SB G Gain**	

SB G Gain : Phase B value code of Signal Balance to be set on Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x7C	**SB G Gain**	

SB G Gain : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x7C	**ERR**	

ERR : Error code that shows what occurred error is

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66) SB Blue Gain(PC, BNC Only)

- Function

  Personal Computer changes Blue Gain value of Monitor Signal Balance.

- Get SB Blue Gain Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x7D		0	

- Set SB Blue Gain

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x7D		1	SB B Gain	

SB G Gain : Phase B value code of Signal Balance to be set on Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x7B	SB B Gain	

SB B Gain : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x7C	ERR	

ERR : Error code that shows what occurred error is

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67) SB Sharpness (PC, BNC Only)

- Function

  Personal Computer changes Sharpness value of Monitor Signal Balance.

- Get SBSharpness Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x7F		0	

- Set SBSharpness

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x7F		1	SBSharpness	

SBSharpness : Signal Balance Sharpness value code to be set on Monitor (0 ~ 100)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x7F	SBSharpness	

SBSharpness : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x7F	ERR	

ERR : Error code that shows what occurred error is

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68) Panel On Time

- Function

  Personal Computer shows Panel On Time of TV / Monitor.

- Get Panel On Time Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x83		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		**0x05**	'A'	0x83	**PTime_ H**	**PTime_L**	

Check Sum

PTime_H : Panel On Time High.

PTime_L : Panel On Time Low.

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x83	**ERR**	

ERR : Error code that shows what occurred error is

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69) Video Wall On

- Function

  Personal Computer turns Video Wall of TV / Monitor ON/OFF.

  Does not operate in MagicNet.

- Get Video Wall On/Off Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x84		0	

- Set Video Wall On/Off

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x84		1	**V.Wall_On**	

V.Wall_On : Video Wall Code to set on TV / Monitor

1	Video Wall ON
0	Video Wall OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x84	**V.Wall_On**	

V.Wall_On : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x84	**ERR**	

ERR : Error code that shows what occurred error is

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70) Temperature Control

- Function

  Personal Computer sets the maximum value of TV / Monitor temperature.

  Only supports models with Temperature notification function.

- Get Temperature Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x85		0	

- Set Temperature Status

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x85		1	**Temperature**	

Temperature : Temperature code to be set on TV/Monitor

Data	45 ~ 125(℃)

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x85	**Temperature**	

Temperature : Same as above

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x85	**ERR**	

ERR : Error code that shows what occurred error is

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71) Brightness Sensor

- Function

  Personal Computer turns Brightness Sensor of TV / Monitor on/off.

  Only supports models with Brightness Sensor.

  PDP Model is not available it.

- Get Brightness Sensor ON/OFF Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x86		0	

- Set Brightness Sensor ON/OFF

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x86		1	**BR_Sensor**	

BR_Sensor : Brightness Sensor Code to be set on TV/Monitor

1	Brightness Sensor ON
0	Brightness Sensor OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x86	**BR_Sensor**	

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x86	**ERR**	

ERR : Error code that shows what occurred error is

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72) Dynamic Contrast

- Function

  Personal Computer turns Dynamic Contrast of TV / Monitor on/off.

  Does not operate in PC, DVI and MagicNet.

  PDP Model is not available it.

- Get Dynamic Contrast ON/OFF Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x87		0	

- Set Dynamic Contrast ON/OFF

Header	Command	ID	Data Length	Data 1	Check Sum
0xAA	0x87		1	**DY_Cont**	

DY_Cont : Dynamic Contrast code to be set on TV/Monitor

1	Dynamic Contrast ON
0	Dynamic Contrast OFF

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'A'	0x87	**DY_Cont**	

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x87	**ERR**	

ERR : Error code that shows what occurred error is

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72) Video Wall User Control

- Function

  Personal Computer turns Video Wall function of TV / Monitor on/off.

  Does not operate in MagicNet.

- Get Video Wall Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x89		0	

- Set Video Wall

Header	Command	ID	Data Length	Data 1	Data 2	Check Sum
0xAA	0x89		2	**Wall_Div**	**Wall_SNo**	

Wall_Div : Video Wall Divider code set on TV/Monitor

H \ V	1	2	3	4	5
OFF	0x00	0x00	0x00	0x00	0x00
1	0x11	0x12	0x13	0x14	0x15
2	0x21	0x22	0x23	0x24	0x25
3	0x31	0x32	0x33	0x34	0x35
4	0x41	0x42	0x43	0x44	0x45
5	0x51	0x52	0x53	0x54	0x55

Wall_SNo : TV/Monitor Number code set on TV/Monitor

Set Number	Data
1	0x01
2	0x02
...	...
24	0x18
25	0x19

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	Check Sum
0xAA	0xFF		4	'A'	0x89	**Wall_Div**	**Wall_SNo**	

- Nak

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Check Sum
0xAA	0xFF		3	'N'	0x89	**ERR**	

ERR : Error code that shows what occurred error is

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73) Model Name Control

- Function

  Personal Computer grasps TV / Monitor Model Name and display.

- Get Model Number Status

Header	Command	ID	Data Length	Check Sum
0xAA	0x8A		0	

- Ack

Header	Command	ID	Data Length	Ack/Nak	r-CMD	Val 1	Val 2	
0xAA	0xFF		**0x12**	'A'	0x8A	**M_Name1**	**M_Name2**	

Val 3	Val 4	Val 5	Val 6	Val 7	Val 8	Val 9	Val 10
M_Name3	**M_Name4**	**M_Name5**	**M_Name6**	**M_Name7**	**M_Name8**	**M_Name9**	**M_Name10**

Val 11	Val 12	Val 13	Val 14	Val 15	Val 16
M_Name11	**M_Name12**	**M_Name13**	**M_Name14**	**M_Name15**	**M_Name16**

Check Sum

M_Name1 ~ M_Name16 : TV / Monitor의 Model Name

M_Name1	'S'
M_Name2	'y'
M_Name3	'n'
M_Name4	'c'
M_Name5	'M'
M_Name6	'a'
M_Name7	's'
M_Name8	't'
M_Name9	'e'
M_Name10	'r'
M_Name11	'4'
M_Name12	'0'
M_Name13	'0'
M_Name14	'D'
M_Name15	'X'
M_Name16	'n'

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